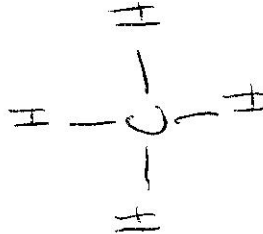
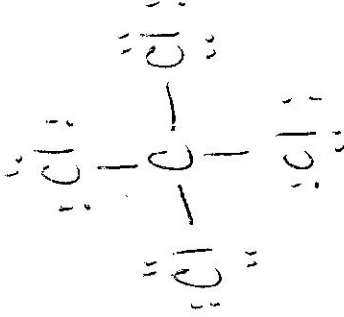
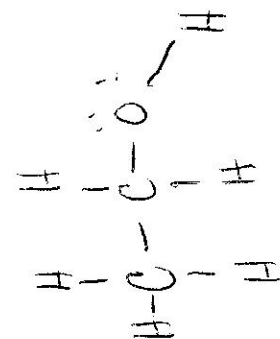
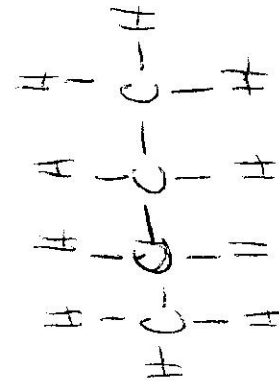


**Model Building Activity** -Build the following molecules and fill in the table below.

Chemical Formula	H <sub>2</sub> O	CHCl <sub>3</sub>	H <sub>2</sub> O <sub>2</sub>	NH <sub>3</sub>
Name	Water	Trichloromethane	Hydrogen peroxide	Ammonia
Lewis Structure				
# of Atoms bonded to central atom	2	4		3
# of Lone pairs on central atom	2	0		1
VSEPR Shape	Bent	tetrahedral		trigonal pyramidal
Polar bonds (yes or no)	yes	yes		yes
Symmetrical Shape	no	no		no
Molecular polarity (yes or no)	yes	yes		yes

**VSEPR Shapes:** Linear, Bent, Trigonal planar, Trigonal Pyramidal, Tetrahedral (underlined shapes can show symmetry)

Chemical Formula	CH <sub>4</sub>	CCl <sub>4</sub>	CH <sub>3</sub> CH <sub>2</sub> OH	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>
Name	Methane	Carbon Tetrachloride	Ethanol	Butane
Lewis Structure				
# of Atoms bonded to central atom	4	4		
# of Lone pairs on central atom	0	0		
VSEPR Shape	tetrahedral	tetrahedral		
Polar bonds (yes or no)	no	yes		
Symmetrical Shape	yes	yes		
Molecular polarity (yes or no)	no	no		

**VSEPR Shapes:** Linear, Bent, Trigonal planar, Trigonal Pyramidal, Tetrahedral (underlined shapes can show symmetry)

**Model Building Activity** -Build the following molecules and fill in the table below and show the direction of molecular polarity if it exists.

Chemical Formula	F <sub>2</sub> O	SiF <sub>4</sub>	CCl <sub>2</sub> O	NF <sub>3</sub>
Name	Difluorine monoxide	Silicon tetrafluoride		Nitrogen trifluoride
Lewis Structure				
# of Atoms bonded to central atom	2	4	3	3
# of Lone pairs on central atom	2	0	0	1
VSEPR Shape	Bent	Tetrahedral	trigonal planar	trigonal pyramidal
Polar bonds (yes or no)	yes	yes	yes	yes
Symmetrical Shape	no	yes	does not exhibit symmetry	no
Molecular polarity (yes or no)	yes	no	yes	yes

**VSEPR Shapes:** Linear, Bent, Trigonal planar, Trigonal Pyramidal, Tetrahedral (underlined shapes can show symmetry)

Chemical Formula	$\text{ClO}_3^-$	$\text{NO}_3^-$	$\text{C}_3\text{H}_2$	$\text{C}_2\text{H}_2\text{Cl}_2$
Name				
Lewis Structure				
# of Atoms bonded to central atom	3	3		one of 3 possibilities
# of Lone pairs on central atom	1	0		
VSEPR Shape	trigonal pyramidal	trigonal planar		
Polar bonds (yes or no)	yes	yes		
Symmetrical Shape	no	yes		
Molecular polarity (yes or no)	yes	no		

**VSEPR Shapes:** Linear, Bent, Trigonal planar, Trigonal Pyramidal, Tetrahedral (underlined shapes can show symmetry)

Chemical Formula	$\text{CO}_3^{2-}$	$\text{O}_3$	$\text{N}_2\text{F}_2$	HCN
Name			dinitrogen difluoride	
Lewis Structure	$\left[ \begin{array}{c} \text{:}\ddot{\text{O}}\text{:} \\ \parallel \\ \text{C} \\ \diagup \quad \diagdown \\ \text{:}\ddot{\text{O}}\text{:} \quad \text{:}\ddot{\text{O}}\text{:} \end{array} \right]^{2-}$	$\begin{array}{c} \text{:}\ddot{\text{O}}\text{:} \\ \parallel \\ \text{O} - \text{O} \end{array}$	$\begin{array}{c} \text{:}\ddot{\text{F}}\text{:} \quad \text{:}\ddot{\text{F}}\text{:} \\ \diagdown \quad \diagup \\ \text{N} = \text{N} \\ \diagup \quad \diagdown \\ \text{:}\ddot{\text{F}}\text{:} \quad \text{:}\ddot{\text{F}}\text{:} \end{array}$	$\text{H} - \text{C} \equiv \text{N} \text{:}$
# of Atoms bonded to central atom	3	2		2
# of Lone pairs on central atom	0	1		0
VSEPR Shape	trigonal planar	Bent		linear
Polar bonds (yes or no)	yes	no		yes
Symmetrical Shape	yes	<del>yes</del> no		does not exhibit symmetry
Molecular polarity (yes or no)	no	no		yes

**VSEPR Shapes:** Linear, Bent, Trigonal planar, Trigonal Pyramidal, Tetrahedral (underlined shapes can show symmetry)